

FCC Radio Test Report

FCC ID : C3K2079
Equipment : Portable Computing Device
Brand Name : Microsoft
Model Name : 2079
Applicant : Microsoft Corporation
One Microsoft Way Redmond,
WA 98052-6399, U.S.A
Manufacturer : Microsoft Corporation
One Microsoft Way Redmond,
WA 98052-6399, U.S.A
Standard : 47 CFR FCC Part 15.225

The product was received on Oct. 16, 2023, and testing was started from Nov. 24, 2023 and completed on Nov. 25, 2023. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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TEST PHOTOS

PHOTOGRAPHS OF EUT v01



Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.215(c)	Emission Bandwidth	PASS	-
3.2	15.225(e)	Frequency Stability	PASS	-
3.3	15.225(a)~(d)	Field Strength of Fundamental Emissions and Spectrum Mask	PASS	-
3.4	15.225(d)	Transmitter Radiated Unwanted Emissions	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

None

Reviewed by: Ben Tseng

Report Producer: Ann Hou



1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information					
Frequency Range(MHz)	Type	Mode	Ch. Frequency (MHz)	Channel Number	Field Strength (dBuV/m)
13.553 – 13.567	NFC-A (ISO 14443-3A) NFC-B (ISO 14443-3B) NFC-F (ISO 18092) NFC-V (ISO 15693)	NFC	13.56	1	51.99

Note :

- ♦ Field strength performed peak level at 3m.
- ♦ Uses a ASK modulation.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain
1	Microsoft	1415-0AEF0QS	Loop antenna	N/A	-

Note: All measurements were performed radiated and therefore additional antenna gain documentation is not required.

1.1.3 EUT Information

Operational Condition	
EUT Power Type	From AC Adapter / Battery
Type of EUT	
<input checked="" type="checkbox"/>	Stand-alone
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.:
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.:
<input type="checkbox"/>	Other:



1.1.4 Test Signal Duty Cycle

Duty Cycle Operation Restriction	
The transmitter is used for	The transmitter is operated
<input checked="" type="checkbox"/> Inductive applications	<input checked="" type="checkbox"/> Automatically triggered
<input type="checkbox"/> Duty cycle fixed mode	<input checked="" type="checkbox"/> Duty cycle random mode
<input checked="" type="checkbox"/> Duty cycle mode - NFC-A (ISO 14443-3A)	
Declare transmitter duty cycle / 1 hour =	100%
<input checked="" type="checkbox"/> Duty cycle mode - NFC-B (ISO 14443-3B)	
Declare transmitter duty cycle / 1 hour =	100%
<input checked="" type="checkbox"/> Duty cycle mode - NFC-F (ISO 18092)	
Declare transmitter duty cycle / 1 hour =	100%
<input checked="" type="checkbox"/> Duty cycle mode - NFC-V (ISO 15693)	
Declare transmitter duty cycle / 1 hour =	100%

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- ◆ KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
<input checked="" type="checkbox"/>	Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)		
		TEL: 886-3-327-3456	FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Vivi Jiang	22.2~23.4°C / 50~52%	25/Nov/2023
Radiated	03CH03-HY	Edward Wang	23.1~23.4°C / 50~52%	24/Nov/2023~25/Nov/2023
<input type="checkbox"/>	Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)		
		TEL: 886-3-318-0787	FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Emission Bandwidth	0.005 MHz	Confidence levels of 95%
Frequency Stability	5 ppm	Confidence levels of 95%
Field Strength of Fundamental Emissions and Spectrum Mask	2.5 dB	Confidence levels of 95%
Transmitter Radiated Unwanted Emissions	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Condition

Condition Item	Abbreviation/Remark	Remark
TnomVnom	Tnom	20°C
TminVmin	Vnom	120V
TminVmax	Vmin	102V
TmaxVmin	Vmax	138V
TmaxVmax	Tmin	-20°C
	Tmax	50°C
Freq. Stability	Abbreviation	Remark
-20°C	-	-
-10°C	-	-
0°C	-	-
10°C	-	-
20°C	-	-
30°C	-	-
40°C	-	-
50°C	-	-
20°C-138V	-	-
20°C-120V	-	-
20°C-102V	-	-




2.2 Test Channel Mode

Test Software Version	SN220_AntennaSelftest_Loop1 Revision : 1.00
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Mode	Power Setting
NFC	-
13.56MHz	default

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth, Frequency Stability
Test Condition	Conducted measurement

The Worst Case Mode for Following Conformance Tests			
Tests Item	Field Strength of Fundamental Emissions and Spectrum Mask Transmitter Radiated Unwanted Emissions		
Test Condition	Radiated measurement		
Pretest Mode	<input checked="" type="checkbox"/>	1. NFC-A (ISO 14443-3A)	
	<input checked="" type="checkbox"/>	2. NFC-B (ISO 14443-3B)	
	<input checked="" type="checkbox"/>	3. NFC-F (ISO 18092)	
	<input checked="" type="checkbox"/>	4. NFC-V (ISO 15693)	
Mode 4 configuration was pretested and found to be the worst case and measured during the test.			
Operating Mode	Mode 6		
Six EUT configure modes were pretest, only the worst case was performed and recorded in this test report. EUT configure modes are described in the operational description.			
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	

2.4 Accessories

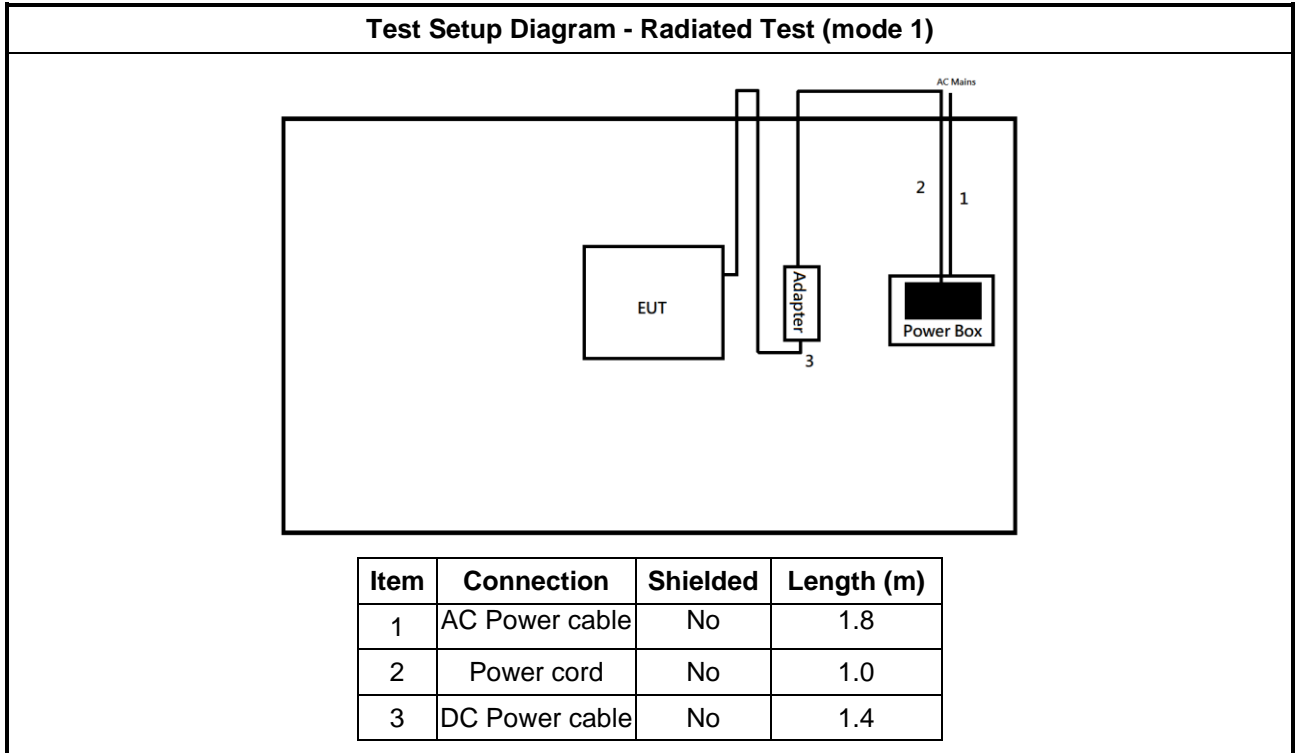
Accessories Information				
Adapter	Brand Name	Microsoft	Model Name	1963
Power cord 1	Brand Name	Volex (Asia) Pte Ltd	Model Name	X908885-003
Power cord 2	Brand Name	WELL SHIN TECHNOLOGY CO.,LTD	Model Name	X908885-003
Battery 1	Brand Name	DYN	Model Name	DYNM04
Battery 2	Brand Name	SWD-COS	Model Name	MQ20
Battery 3	Brand Name	SWD-ATL	Model Name	MQ20
Accessory	Brand Name	Microsoft	Model Name	1864
Accessory	Brand Name	Microsoft	Model Name	1962

Reminder: Regarding to more detail and other information, please refer to user manual.

2.5 Support Equipment

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Type-C Cable	Ugreen	US286	-	-
2	Portable SSD	Transcend	ESD260C	-	-
3	USB Dongle	SanDisk	SDDDC2-128G-G46	-	-

2.6 Test Setup Diagram



3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

20dB Bandwidth Limit	
<input checked="" type="checkbox"/>	Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band (13.553 – 13.567).

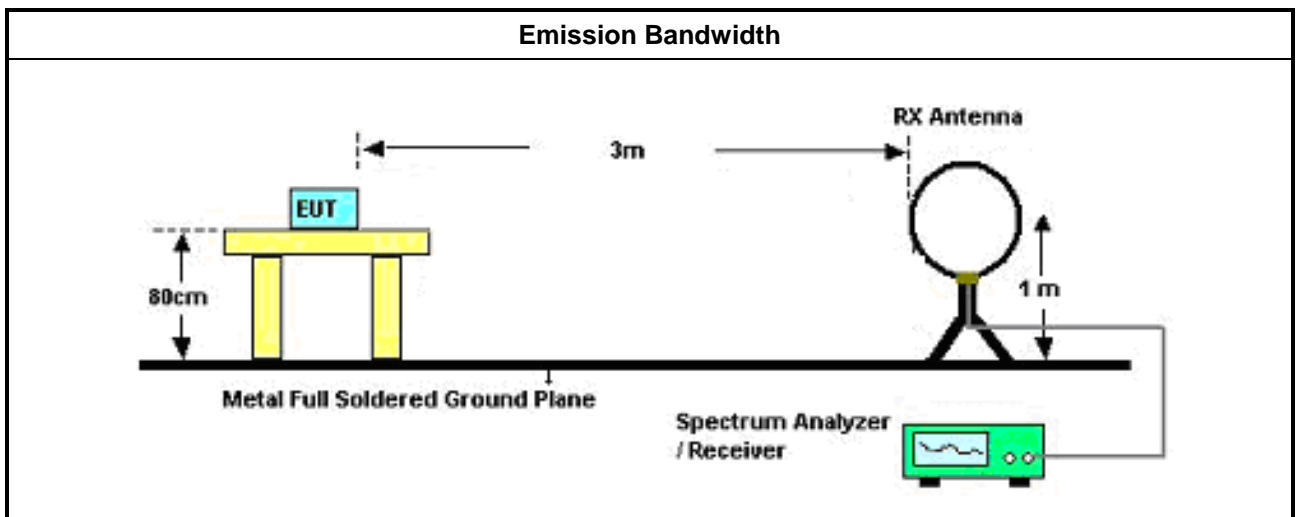
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Because the measured signal is CW or CW-like adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.
<input checked="" type="checkbox"/>	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A

3.2 Frequency Stability

3.2.1 Frequency Stability Limit

Frequency Stability Limit	
<input checked="" type="checkbox"/>	Carrier frequency stability shall be maintained to $\pm 0.01\%$ (± 100 ppm).

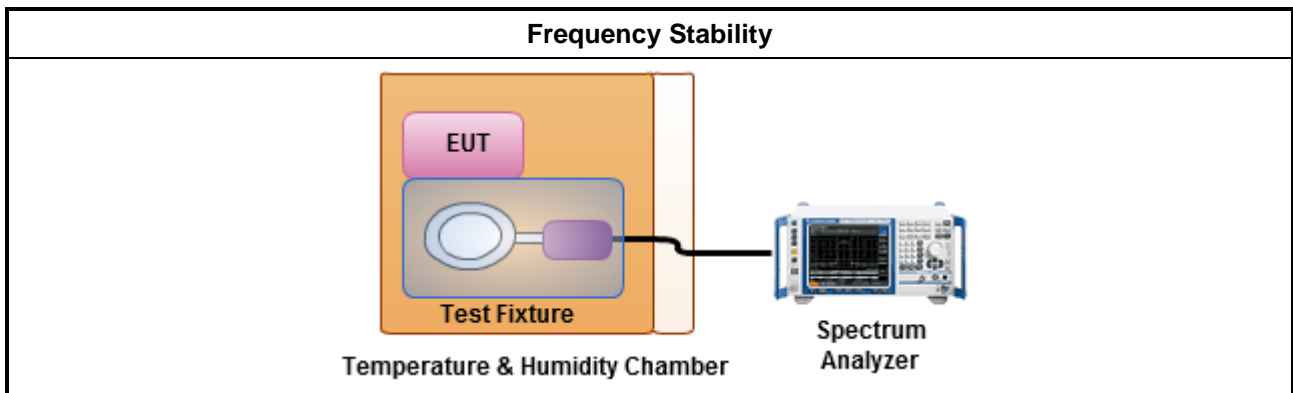
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.8 for frequency stability tests
<input checked="" type="checkbox"/>	Frequency stability with respect to ambient temperature
<input checked="" type="checkbox"/>	Frequency stability when varying supply voltage
<input type="checkbox"/>	For conducted measurement.
<input checked="" type="checkbox"/>	For radiated measurement. The equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted power level.

3.2.4 Test Setup



3.2.5 Test Result of Frequency Stability

Refer as Appendix B

3.3 Field Strength of Fundamental Emissions and Spectrum Mask

3.3.1 Field Strength of Fundamental Emissions and Spectrum Mask Limit

Field Strength of Fundamental Emissions and Spectrum Mask					
Emissions	(uV/m)@30m	(dBuV/m)@30m	(dBuV/m)@10m	(dBuV/m)@3m	(dBuV/m)@1m
fundamental	15848	84.0	103.1	124.0	143.1
Quasi peak measurement of the fundamental.					

Spectrum Mask					
Freq. of Emission (MHz)	(uV/m)@30m	(dBuV/m)@30m	(dBuV/m)@10m	(dBuV/m)@3m	(dBuV/m)@1m
1.705~13.110	30	29.5	48.6	69.5	88.6
13.110~13.410	106	40.5	59.6	80.5	99.6
13.410~13.553	334	50.5	69.6	90.5	109.6
13.553~13.567	15848	84.0	103.1	124.0	143.1
13.567~13.710	334	50.5	69.6	90.5	109.6
13.710~14.010	106	40.5	59.6	80.5	99.6
14.010~30.000	30	29.5	48.6	69.5	88.6

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

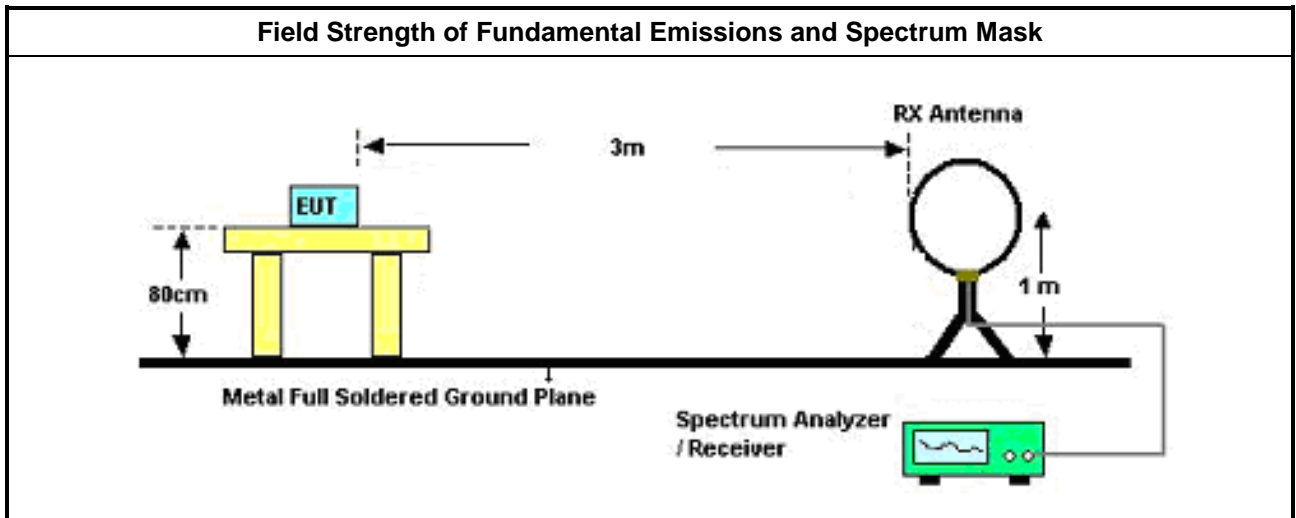
Test Method	
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz and test distance is 3m.
<input checked="" type="checkbox"/>	At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the requirements; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be following below methods.
<input type="checkbox"/>	The results shall be extrapolated to the specified distance by making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
<input checked="" type="checkbox"/>	The results shall be by using the square of an inverse linear distance extrapolation factor (40 dB/decade).
<input checked="" type="checkbox"/>	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.

3.3.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor).

3.3.5 Test Setup



3.3.6 Test Result of Field Strength of Fundamental Emissions and Spectrum Mask

Refer as Appendix C

3.4 Transmitter Radiated Unwanted Emissions

3.4.1 Transmitter Radiated Unwanted Emissions Limit

Transmitter Radiated Unwanted Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

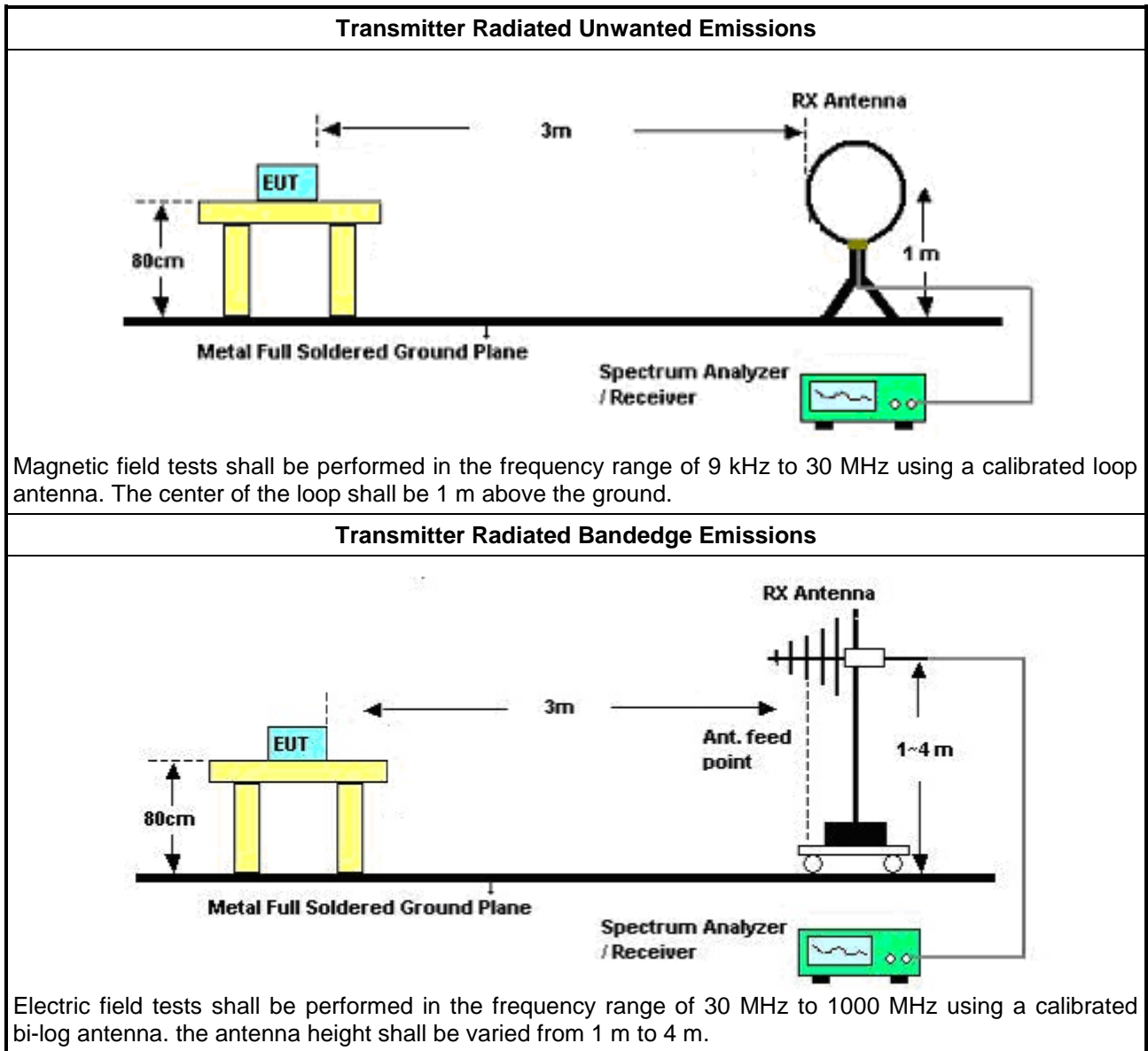
Test Method	
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1 GHz and test distance is 3m.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz and test distance is 3m.
<input checked="" type="checkbox"/>	At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the requirements; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be following below methods.
<input type="checkbox"/>	The results shall be extrapolated to the specified distance by making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
<input checked="" type="checkbox"/>	The results shall be by using the square of an inverse linear distance extrapolation factor (40 dB/decade).
<input checked="" type="checkbox"/>	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.
<input checked="" type="checkbox"/>	The any unwanted emissions level shall not exceed the fundamental emission level.
<input checked="" type="checkbox"/>	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
<input checked="" type="checkbox"/>	KDB 414788 D01 v01r01 Open-Field Test Sites and Chamber Correlation Justification.
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

3.4.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.4.5 Test Setup



3.4.6 Transmitter Radiated Unwanted Emissions

Refer as Appendix C



4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer / Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV	101013	10Hz ~ 30GHz	10/Apr/2023	09/Apr/2024
Temp. and Humidity	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20~ 100°C	17/May/2023	16/May/2024
SENSE-NFC	Sporton	V5.11.0	NA	NA	NA	NA

Instrument for Radiated Test

Instrument	Manufacturer / Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	30/Jul/2023	29/Jul/2024
EMI Test Receiver	R&S	ESR3	ESR3102052	9kHz~3.6GHz	26/Mar/2023	25/Mar/2024
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	26/Oct/2023	25/Oct/2024
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	23/Mar/2023	22/Mar/2024
Bilog Antenna & 6dB Attenuator	SCHAFFNER / EMC1	CBL6112B / N-6-05	22237 / AT-N-0603	30MHz~1GHz	15/Oct/2023	14/Oct/2024
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	13/Jun/2023	12/Jun/2024
RF Cable-R03m	Jye Bao	RG142	03CH03-cable-02	30MHz~1GHz	13/Jun/2023	12/Jun/2024
Amplifier	Aglient	8447D	2944A08033	10kHz~1.3GHz	14/Sep/2023	13/Sep/2024
SENSE-NFC	Sporton	V5.11.10	NA	NA	NA	NA

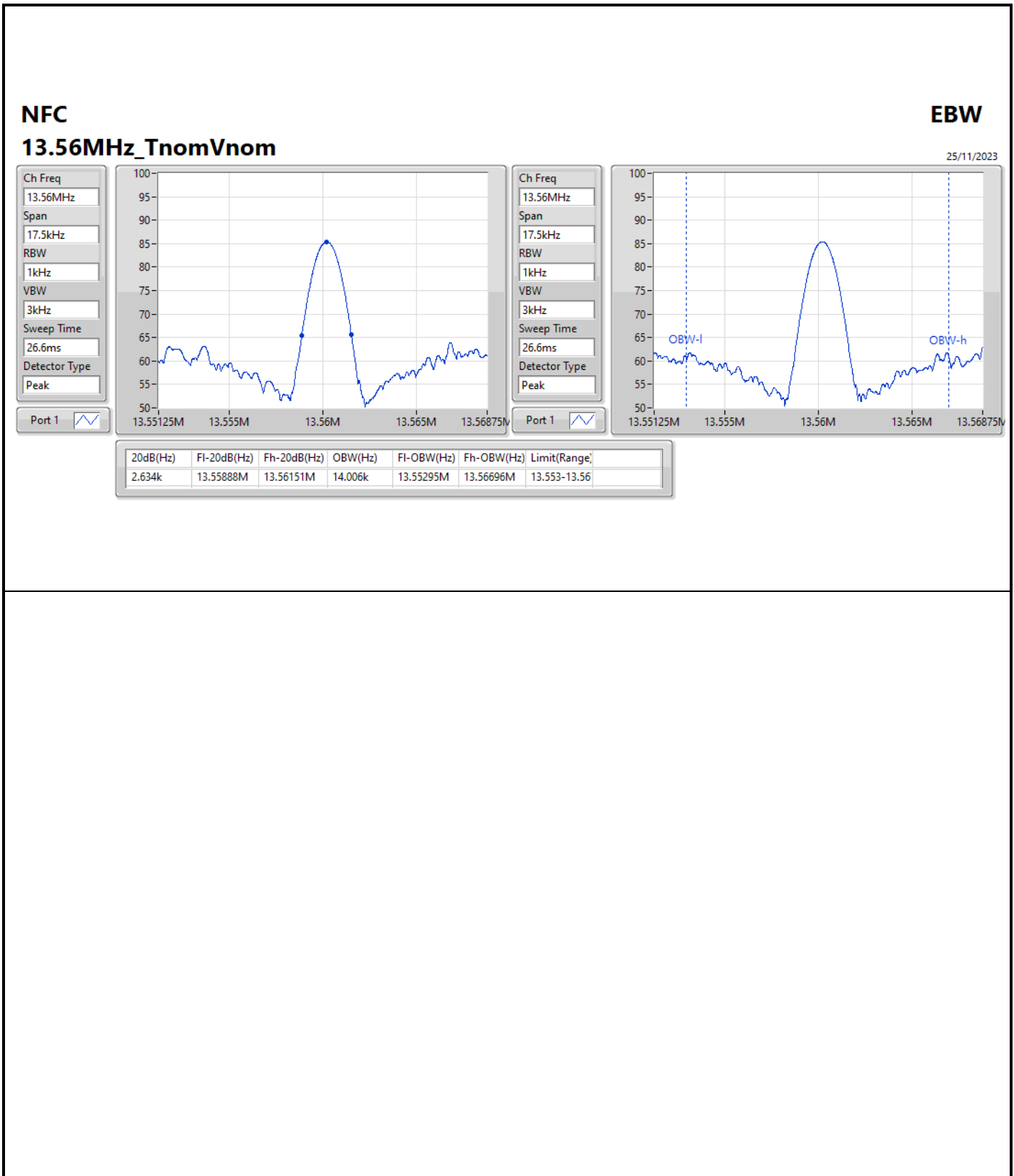


Summary

Mode	20dB (Hz)	FI-20dB (Hz)	Fh-20dB (Hz)	OBW (Hz)	Limit (Range)
13.553-13.567MHz	-	-	-	-	-
NFC	2.634k	13.55888M	13.56151M	14.006k	13.553-13.567

Result

Mode	Result	20dB (Hz)	FI-20dB (Hz)	Fh-20dB (Hz)	OBW (Hz)	FI-OBW (Hz)	Fh-OBW (Hz)	Limit (Range)
NFC	-	-	-	-	-	-	-	-
13.56MHz_TnomVnom	Pass	2.634k	13.55888M	13.56151M	14.006k	13.55295M	13.56696M	13.553-13.567





Summary

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port	Remark
13.553-13.567MHz	-	-	-	-	-	-	-
NFC	Pass	13.56M	13.559617M	28.2406	100	1	2 min



Result

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port	Remark
NFC	-	-	-	-	-	-	-
13.56MHz_-20°C	Pass	13.56M	13.559776M	16.529	100	1	0 min
13.56MHz_-20°C	Pass	13.56M	13.55981M	13.9752	100	1	2 min
13.56MHz_-20°C	Pass	13.56M	13.559719M	20.7317	100	1	5 min
13.56MHz_-20°C	Pass	13.56M	13.559772M	16.7954	100	1	10 min
13.56MHz_-10°C	Pass	13.56M	13.560004M	0.3226	100	1	0 min
13.56MHz_-10°C	Pass	13.56M	13.560004M	0.3226	100	1	2 min
13.56MHz_-10°C	Pass	13.56M	13.560005M	0.3871	100	1	5 min
13.56MHz_-10°C	Pass	13.56M	13.560005M	0.3871	100	1	10 min
13.56MHz_0°C	Pass	13.56M	13.559704M	21.7939	100	1	0 min
13.56MHz_0°C	Pass	13.56M	13.559973M	1.9716	100	1	2 min
13.56MHz_0°C	Pass	13.56M	13.560146M	10.7841	100	1	5 min
13.56MHz_0°C	Pass	13.56M	13.55985M	11.064	100	1	10 min
13.56MHz_10°C	Pass	13.56M	13.559689M	22.9027	100	1	0 min
13.56MHz_10°C	Pass	13.56M	13.559617M	28.2406	100	1	2 min
13.56MHz_10°C	Pass	13.56M	13.55987M	9.576	100	1	5 min
13.56MHz_10°C	Pass	13.56M	13.559948M	3.7995	100	1	10 min
13.56MHz_20°C	Pass	13.56M	13.559809M	14.1178	100	1	0 min
13.56MHz_20°C	Pass	13.56M	13.560057M	4.1729	100	1	2 min
13.56MHz_20°C	Pass	13.56M	13.559785M	15.8796	100	1	5 min
13.56MHz_20°C	Pass	13.56M	13.559738M	19.2935	100	1	10 min
13.56MHz_30°C	Pass	13.56M	13.560015M	1.0927	100	1	0 min
13.56MHz_30°C	Pass	13.56M	13.55996M	2.9581	100	1	2 min
13.56MHz_30°C	Pass	13.56M	13.559916M	6.1874	100	1	5 min
13.56MHz_30°C	Pass	13.56M	13.559909M	6.686	100	1	10 min
13.56MHz_40°C	Pass	13.56M	13.55969M	22.8426	100	1	0 min
13.56MHz_40°C	Pass	13.56M	13.559925M	5.5619	100	1	2 min
13.56MHz_40°C	Pass	13.56M	13.559837M	12.0487	100	1	5 min
13.56MHz_40°C	Pass	13.56M	13.559877M	9.0829	100	1	10 min
13.56MHz_50°C	Pass	13.56M	13.559763M	17.5017	100	1	0 min
13.56MHz_50°C	Pass	13.56M	13.559924M	5.6022	100	1	2 min
13.56MHz_50°C	Pass	13.56M	13.559814M	13.7171	100	1	5 min
13.56MHz_50°C	Pass	13.56M	13.55987M	9.6186	100	1	10 min
13.56MHz_20°C-138V	Pass	13.56M	13.559831M	12.4946	100	1	0 min
13.56MHz_20°C-138V	Pass	13.56M	13.559905M	6.9848	100	1	2 min
13.56MHz_20°C-138V	Pass	13.56M	13.559848M	11.1816	100	1	5 min
13.56MHz_20°C-138V	Pass	13.56M	13.559979M	1.58	100	1	10 min
13.56MHz_20°C-120V	Pass	13.56M	13.559823M	13.04	100	1	0 min
13.56MHz_20°C-120V	Pass	13.56M	13.559819M	13.3251	100	1	2 min
13.56MHz_20°C-120V	Pass	13.56M	13.559843M	11.6118	100	1	5 min
13.56MHz_20°C-120V	Pass	13.56M	13.55997M	2.1887	100	1	10 min
13.56MHz_20°C-102V	Pass	13.56M	13.559944M	4.1601	100	1	0 min
13.56MHz_20°C-102V	Pass	13.56M	13.559783M	16.0373	100	1	2 min
13.56MHz_20°C-102V	Pass	13.56M	13.559788M	15.6532	100	1	5 min



Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port	Remark
13.56MHz_20°C-102V	Pass	13.56M	13.559846M	11.3918	100	1	10 min



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Azimuth (°)	Height (m)
13.553-13.567MHz	-	-	-	-	-	-	-	-	-
NFC	Pass	PK	2.12M	51.17	69.50	-18.33	3	360	1.00

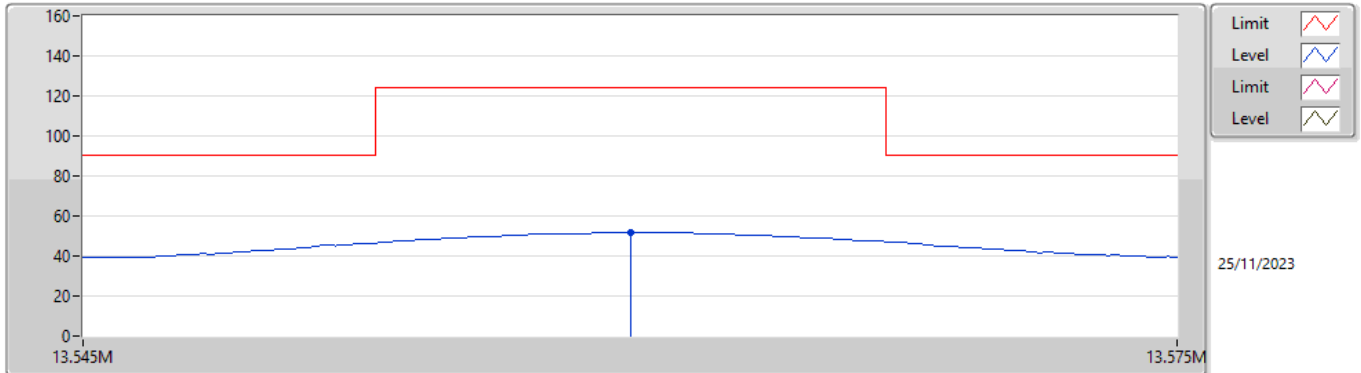


Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Azimuth (°)	Height (m)
NFC	-	-	-	-	-	-	-	-	-
13.56MHz_Adapter	Pass	PK	13.56M	51.99	124.00	-72.01	3	360	1.00
13.56MHz_Adapter	Pass	PK	49.89k	37.23	133.64	-96.41	3	0	1.00
13.56MHz_Adapter	Pass	PK	99.522k	36.37	107.64	-71.27	3	0	1.00
13.56MHz_Adapter	Pass	PK	124.056k	31.38	125.72	-94.34	3	0	1.00
13.56MHz_Adapter	Pass	PK	926.1k	36.16	68.28	-32.12	3	360	1.00
13.56MHz_Adapter	Pass	PK	2.12M	51.17	69.50	-18.33	3	360	1.00
13.56MHz_Adapter	Pass	PK	5.105M	39.41	69.50	-30.09	3	360	1.00

NFC

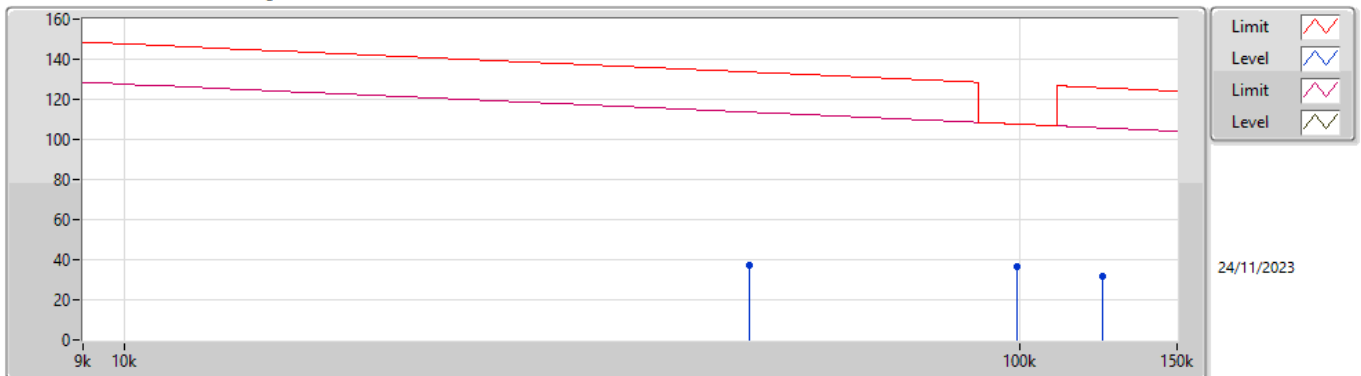
13.56MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	13.56M	51.99	124.00	-72.01	22.79	3	Parallel	360	1.00	29.20	22.20	0.59	-

NFC

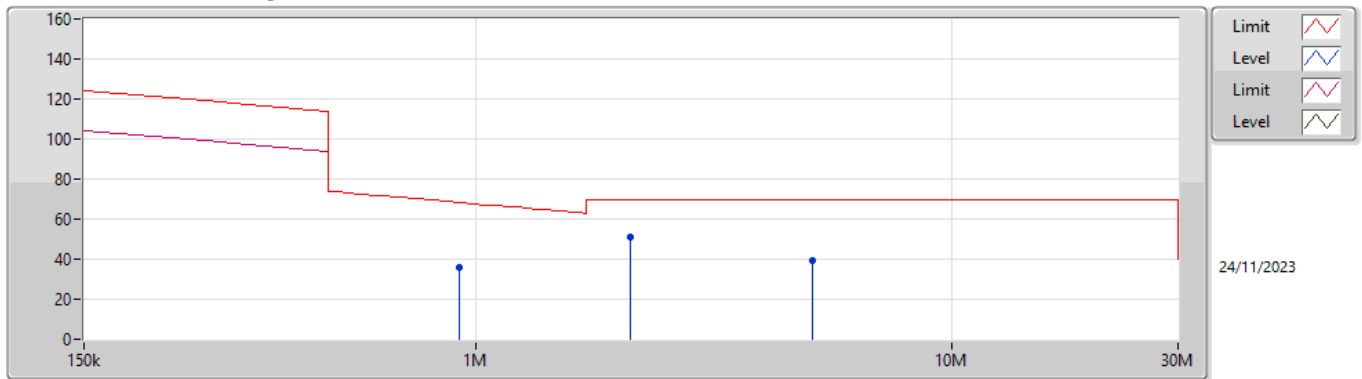
13.56MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	49.89k	37.23	133.64	-96.41	20.68	3	Parallel	0	1.00	16.55	20.60	0.08	-
PK	99.522k	36.37	107.64	-71.27	19.67	3	Parallel	0	1.00	16.70	19.59	0.08	-
PK	124.056k	31.38	125.72	-94.34	19.80	3	Parallel	0	1.00	11.58	19.72	0.08	-

NFC

13.56MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	926.1k	36.16	68.28	-32.12	20.23	3	Parallel	360	1.00	15.93	20.07	0.16	-
PK	2.12M	51.17	69.50	-18.33	19.92	3	Parallel	360	1.00	31.25	19.70	0.22	-
PK	5.105M	39.41	69.50	-30.09	20.69	3	Parallel	360	1.00	18.72	20.35	0.34	-



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Azimuth (°)	Height (m)
13.553-13.567MHz	-	-	-	-	-	-	-	-	-
NFC	Pass	PK	33.88M	29.12	40.00	-10.88	3	360	1.00

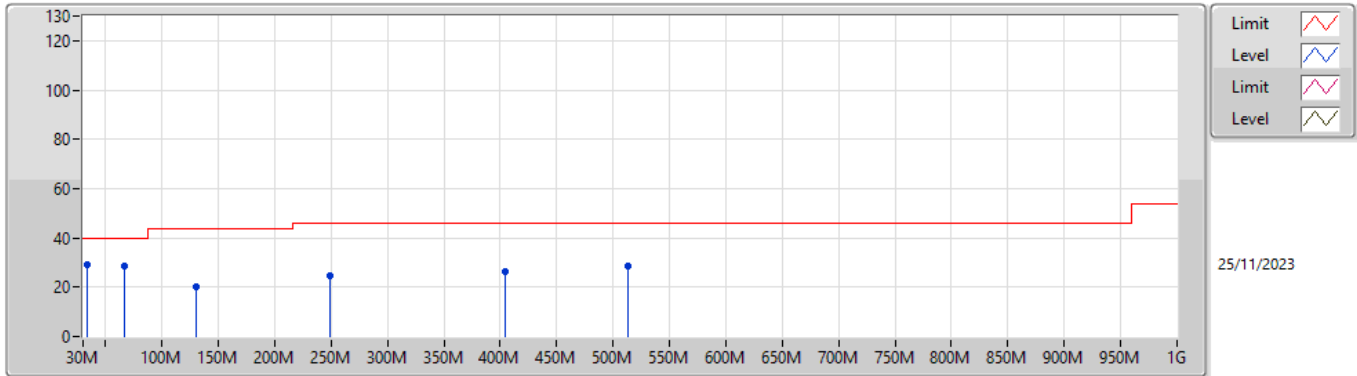


Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Azimuth (°)	Height (m)
NFC	-	-	-	-	-	-	-	-	-
13.56MHz_Adapter	Pass	PK	33.88M	29.12	40.00	-10.88	3	360	1.00
13.56MHz_Adapter	Pass	PK	66.86M	28.80	40.00	-11.20	3	360	1.00
13.56MHz_Adapter	Pass	PK	130.88M	19.93	43.50	-23.57	3	360	1.00
13.56MHz_Adapter	Pass	PK	249.22M	24.57	46.00	-21.43	3	360	1.00
13.56MHz_Adapter	Pass	PK	404.42M	26.57	46.00	-19.43	3	360	1.00
13.56MHz_Adapter	Pass	PK	513.06M	28.30	46.00	-17.70	3	360	1.00
13.56MHz_Adapter	Pass	PK	30M	24.24	40.00	-15.76	3	0	1.00
13.56MHz_Adapter	Pass	PK	121.18M	25.44	43.50	-18.06	3	0	1.00
13.56MHz_Adapter	Pass	PK	204.6M	25.70	43.50	-17.80	3	0	1.00
13.56MHz_Adapter	Pass	PK	291.9M	26.63	46.00	-19.37	3	0	1.00
13.56MHz_Adapter	Pass	PK	400.54M	27.05	46.00	-18.95	3	0	1.00
13.56MHz_Adapter	Pass	PK	516.94M	29.35	46.00	-16.65	3	0	1.00

NFC

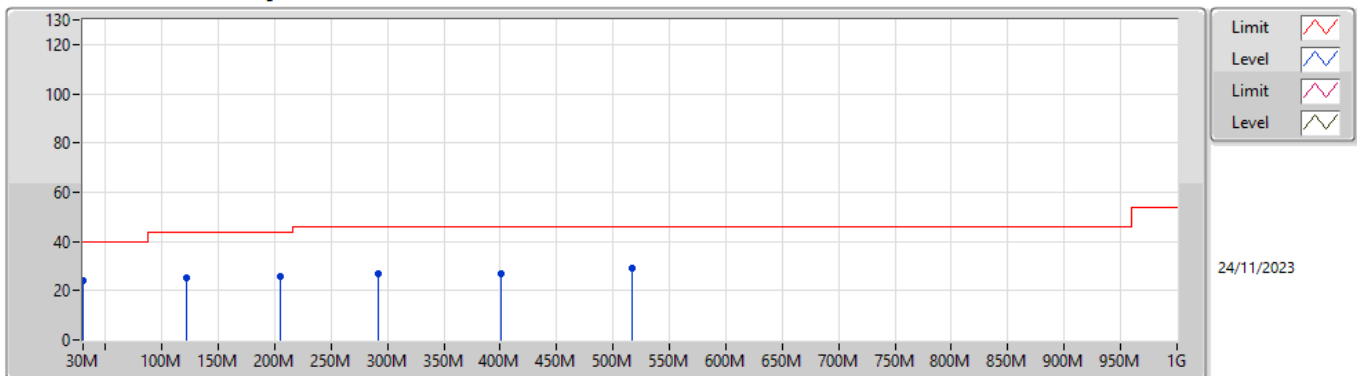
13.56MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	29.12	40.00	-10.88	-5.09	3	Vertical	360	1.00	34.21	21.50	0.98	27.57
PK	66.86M	28.80	40.00	-11.20	-14.81	3	Vertical	360	1.00	43.61	11.41	1.31	27.53
PK	130.88M	19.93	43.50	-23.57	-8.30	3	Vertical	360	1.00	28.23	17.14	1.89	27.33
PK	249.22M	24.57	46.00	-21.43	-6.91	3	Vertical	360	1.00	31.48	17.51	2.63	27.05
PK	404.42M	26.57	46.00	-19.43	-2.82	3	Vertical	360	1.00	29.39	21.23	3.39	27.44
PK	513.06M	28.30	46.00	-17.70	-1.06	3	Vertical	360	1.00	29.36	23.10	3.89	28.05

NFC

13.56MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	30M	24.24	40.00	-15.76	-3.18	3	Horizontal	0	1.00	27.42	23.49	0.92	27.59
PK	121.18M	25.44	43.50	-18.06	-8.08	3	Horizontal	0	1.00	33.52	17.45	1.83	27.36
PK	204.6M	25.70	43.50	-17.80	-10.24	3	Horizontal	0	1.00	35.94	14.48	2.38	27.10
PK	291.9M	26.63	46.00	-19.37	-5.96	3	Horizontal	0	1.00	32.59	18.15	2.86	26.97
PK	400.54M	27.05	46.00	-18.95	-3.02	3	Horizontal	0	1.00	30.07	21.01	3.37	27.40
PK	516.94M	29.35	46.00	-16.65	-1.08	3	Horizontal	0	1.00	30.43	23.09	3.90	28.07

————THE END————